

REMARKS

Claims 1 and 21 have been amended. Support for the amendments to claims 1 and 21 may be found throughout the specification. No new matter has been added. Claims 13, 15, and 17-20 have been canceled without disclaimer of the subject matter contained therein or prejudice to Applicants' right to file any continuation applications directed thereto. Upon entry of this Amendment, claims 1-12, and 21-24 remain pending.

In the Office Action dated December 22, 2006, claims 1-12, and 21-24 were rejected under 35 U.S.C. §101 for being directed to non-statutory subject matter. Applicants respectfully traverse this rejection.

Independent claim 1 recites a method (hence "process") of detecting defects in a patterning device in a photolithographic process that includes, *inter alia*, "comparing the printed test pattern to the printed reference pattern to detect a defect in the patterning device." As discussed in paragraphs [0008]-[0009] of the background section of Applicants' specification, defects in a patterning device, such as a mask, can result in defective devices, such as integrated circuits ("ICs"), and can slow down production of such devices. As stated in paragraph [0010] of Applicants' specification, it is "an aspect of the present invention to provide an improved method of detecting defects in the patterning device." Thus, claim 1 and the claims that depend from claim 1 not only fall within an enumerated statutory category (a process), the claims recite the outcome of said "comparing," i.e. "to detect a defect in the patterning device," contrary to the Examiner's assertion on page 2 of the Office Action.

Independent claim 21 recites a method of detecting defects in a patterning device of a photolithographic apparatus that includes, *inter alia*, "comparing the reference pattern on the first substrate to the pattern on the second substrate to detect a defect in the patterning device." Thus, claim 21 and the claims that depend from claim 21 not only fall within an enumerated statutory category (a process), the claims recite the outcome of said "comparing," i.e. "to detect a defect in the patterning device."

In view of the foregoing, Applicants respectfully request that the rejection to claims 1-12, and 21-24 be withdrawn.

In the Office Action, claims 1, 4-8, 10, and 11 were rejected under 35 U.S.C. §102(b) as being anticipated by Omae et al. (U.S. Patent No. 5,764,793). Applicants respectfully traverse this rejection.

Independent claim 1 recites a method of detecting defects in a patterning device in a photolithographic process that includes "printing a reference pattern on a reference substrate

using the patterning device and a beam of radiation; printing a pattern for manufacture of a device on a production substrate different from said reference substrate using the patterning device and beam of radiation; printing a test pattern on a test substrate using the patterning device and beam of radiation; and comparing the printed test pattern to the printed reference pattern to detect a defect in the patterning device.” Omae et al. does not disclose or suggest all of the features of claim 1.

Omae et al. discloses a method and apparatus to inspect pattern defects on a printed wire board. *See* Omae et al. at Abstract. Omae et al. is silent as to how the wire board is printed. Because there are many different known methods of printing wire boards, Applicants respectfully submit that the printed wire boards of Omae et al. are not necessarily printed with a patterning device and a beam of radiation, as recited by claim 1. Moreover, Omae et al. is directed to inspecting the pattern defects on the board and fixing the pattern that is on the board itself, rather than altering the manner in which the pattern was initially created. *See* Omae et al. at col. 9, lns. 1-22. Hence, Omae et al. does not disclose or suggest a method of detecting defects in a patterning device, as recited by claim 1.

Moreover, Omae et al. does not disclose or suggest that the same patterning device, in which defects are to be detected (i.e. which is subject to the method), is used to 1) print the reference pattern, 2) print the pattern for manufacture of a device on a production substrate, and 3) print the test pattern.

In view of the foregoing, Applicants respectfully submit that claim 1 and the claims that depend from claim 1, and include additional advantageous features, are patentable over Omae et al., and respectfully request that the rejection to claims 1, 4-8, 10, and 11 be withdrawn.

In the Office Action, claims 2, 3, 9, and 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Omae et al. Applicants respectfully traverses this rejection.

Claims 2, 3, 9, and 12 depend from claim 1 and add additional advantageous features that are not disclosed or suggested by Omae et al. As discussed above, claim 1 and the claims that depend from claim 1 are patentable over Omae et al., because Omae et al. does not disclose or suggest each and every feature of claim 1.

Accordingly, Applicants respectfully request that the rejection to claims 2, 3, 9, and 12 be withdrawn.

In the Office Action, claims 21-24 were rejected under 35 U.S.C. §102(b) as being anticipated by Omae et al. Applicants respectfully traverse this rejection.

Independent claim 21 recites a method of detecting defects in a patterning device of a photolithographic apparatus that includes “generating a reference pattern on a first substrate using a beam of radiation and the patterning device; generating a pattern on a second substrate using the beam of radiation and the patterning device; and comparing the reference pattern on the first substrate to the pattern on the second substrate to detect a defect in the patterning device.” Omae et al. does not disclose or suggest each and every feature of claim 21.

As discussed above, Omae et al. does not even disclose a method of detecting defects in a patterning device. Instead, Omae et al. is directed to detecting defects in printed wired boards. As is known in the printed wired board art, there are a plurality of ways to create a printed wired board. Moreover, Omae et al. does not even disclose a patterning device or a beam of radiation to generate a reference pattern or a pattern on a second substrate. As such, Omae et al. does not disclose or even remotely suggest a method of detecting defects in a patterning device of a photolithographic apparatus having all of the features of claim 21.

In view of the foregoing, Applicants respectfully submit that claim 21 and the claims that depend from claim 21 are patentable, and include additional advantageous features, over Omae et al., and respectfully request that the rejection to claims 21-24 be withdrawn.

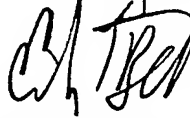
All rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited. If any point remains at issue which the Examiner feels may best be resolved through a personal or telephone interview, please contact the undersigned at the telephone number below.

VAN DER WERF ET AL. -- 10/693,603
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Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'ET Bell', is written over the printed name.

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